

1. An isolated nucleic acid molecule selected from the group consisting of:
a) a nucleic acid comprising the nucleotide sequence of SEQ ID NO:1, SEQ ID NO:3, or a full complement thereof; and
b) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

2. The nucleic acid molecule of claim 1, further comprising vector nucleic acid sequences.

3. The nucleic acid molecule of claim 1, further comprising nucleic acid sequences encoding a heterologous polypeptide.

4. A host cell which contains the nucleic acid molecule of claim 1.

5. An isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2.

6. The polypeptide of claim 5, further comprising heterologous amino acid sequences.

7. An antibody or antigen-binding fragment thereof that selectively binds to the polypeptide of claim 5.

8. A method for producing a polypeptide comprising the amino acid sequence of SEQ ID NO:2, the method comprising culturing the host cell of claim 4 under conditions in which the nucleic acid molecule is expressed.

9. A method for detecting the presence of the polypeptide of claim 5 in a sample, the method comprising:

a) contacting the sample with an antibody that selectively binds to the polypeptide; and

b) determining whether the compound binds to the polypeptide in the sample.

10. A kit comprising a compound that selectively binds to the polypeptide of claim 5 and instructions for use.

5 11. A method for detecting the presence of the nucleic acid molecule of claim 1 in a sample, the method comprising:

a) contacting the sample with a nucleic acid probe or primer that selectively hybridizes to the nucleic acid molecule; and

10 b) determining whether the nucleic acid probe or primer binds to a nucleic acid in the sample.

12. The method of claim 11, wherein the sample comprises mRNA molecules and is contacted with a nucleic acid probe.

15 13. A kit comprising a nucleic acid probe or primer that selectively hybridizes to the nucleic acid molecule of claim 1 and instructions for use.

14. A method for identifying a compound that binds to the polypeptide of claim 5, the method comprising:

20 a) contacting the polypeptide or a cell expressing the polypeptide with a test compound; and

b) determining whether the polypeptide binds to the test compound.

25 15. A method for modulating the activity of the polypeptide of claim 5, the method comprising contacting the polypeptide or a cell expressing the polypeptide with a compound that binds to the polypeptide in a sufficient concentration to modulate the activity of the polypeptide.

30 16. A method of inhibiting aberrant activity of a 53010-expressing cell, comprising contacting the cell with a compound that modulates the activity or expression

of the polypeptide of claim 5, in an amount that is effective to reduce or inhibit the aberrant activity of the cell.

17. The method of claim 16, wherein the compound is selected from the group
5 consisting of a peptide, a phosphopeptide, a small organic molecule, and an antibody.

18. The method of claim 16, wherein the 53010-expressing cell is located in a neural tissue.

10 19. A method of treating or preventing a disorder characterized by aberrant activity of a 53010-expressing cell, in a subject, the method comprising administering to the subject an effective amount of a compound that modulates the activity or expression of the nucleic acid molecule of claim 1, such that the aberrant activity of the 53010-expressing cell is reduced or inhibited.

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20. The method of claim 19, wherein the disorder is a pain related disorder.